

IN THE CLAIMS:

Please amend claims 1-2, 5-8, 15, 19, 21, 23-24, 27-33 as follows:

1. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including barrier layers sandwiching said at least one quantum well; and

confinement layers sandwiching said active region.

2. (Once amended) The VCSEL of claim 1 wherein said barrier layers are comprised of GaAsN.

5. (Once amended) The VCSEL of claim 1 wherein said at least one quantum well further comprises >1% N.

6. (Once amended) The VCSEL of claim 1 wherein said at least one quantum well is up to and including 50Å in thickness.

7. (Once amended) The VCSEL of claim 5 wherein said at least one quantum well is up to and including 50Å in thickness.

8. (Once amended) The VCSEL of claim 1 wherein said barrier layers are comprised of GaAsN.

15. (Once amended) The VCSEL of claim 14 wherein said barrier layers are comprised of GaAsN.

19. (Once amended) The VCSEL of claim 1 wherein said at least one quantum well further comprises >1% N.

21. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including AlGaAs barrier layers sandwiching said at least one quantum well; and
confinement layers sandwiching said active region.

23. (Once amended) The VCSEL of claim 21 wherein said at least one quantum well is up to and including 50Å in thickness.

24. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

27. (Once amended) The VCSEL of claim 24 wherein said at least one quantum well is up to and including 50Å in thickness.

28. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including AlGaAs barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

29. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including InGaAs barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

30. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including GaAsN barrier layers sandwiching said at least one quantum well; and

GaAsN confinement layers sandwiching said active region.

31. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including AlGaAs barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

32. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including GaAsN barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

33. (Once amended) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including AlGaAs barrier layers sandwiching said at least one quantum well; and

GaAsN confinement layers sandwiching said active region.

Un-amended Claims remain in the application as follows:

3. (Not amended) The VCSEL of claim 1 wherein said confinement layers are comprised of AlGaAs.

4. (Not amended) The VCSEL of claim 1 wherein said confinement layers are comprised of AlGaAs.

9. (Not amended) The VCSEL of claim 5 wherein said confinement layers are comprised of AlGaAs.

10. (Not amended) The VCSEL of claim 7 wherein said barrier layers are comprised of AlGaAs.

11. (Not amended) The VCSEL of claim 8 wherein said confinement layers are comprised of AlGaAs.

12. (Not amended) The VCSEL of claim 5 wherein said barrier layers are comprised of AlGaAs.

14. (Not amended) The VCSEL of claim 1 wherein said at least one quantum well is further comprised of Sb.

16. *(Not amended)* The VCSEL of claim 14 wherein said confinement layers are comprised of AlGaAs.

17. *(Not amended)* The VCSEL of claim 16 wherein said barrier layers are comprised of AlGaAs.

18. *(Not amended)* The VCSEL of claim 15 wherein said confinement layers are comprised of AlGaAs.

19. *(Not amended)* The VCSEL of claim 14 wherein said barrier layers are comprised of AlGaAs.

20. *(Not amended)* The VCSEL of claim 19 wherein said confinement layers are comprised of AlGaAs.

22. *(Not amended)* The VCSEL of claim 21 wherein said confinement layers are comprised of AlGaAs.

25. *(Not amended)* The VCSEL of claim 24 wherein said barrier layers are comprised of AlGaAs.

26. *(Not amended)* The VCSEL of claim 24 wherein said barrier layers are comprised of InGaAsN.